AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior version, and listings, of claims in the application:

Listing of Claims:

Claims 1-44 (canceled).

45. (New) A method for controlling the operation of an internal combustion engine using a control unit, based on an air-mass sensor signal from a first air-mass sensor, comprising:

comparing at least one of a first auxiliary signal and a signal derived from the first auxiliary signal to one of the air-mass sensor signal and a signal derived from the air-mass sensor signal to obtain a differential signal;

obtaining a positive differential signal by forming an absolute value of the differential signal; and

obtaining a filtered differential signal by filtering the positive differential signal;

wherein the air-mass sensor signal is used as a controlled variable if one of the positive differential signal and the filtered differential signal falls below a predefined threshold value, and wherein the first auxiliary signal is used as the controlled variable if one of the positive differential signal and the filtered differential signal exceeds the predefined threshold value.

46. (New) The method according to claim 45, wherein the differential signal is formed by the following steps:

differentiating the air-mass sensor signal and the first auxiliary signal to obtain a differentiated air-mass sensor signal and a differentiated auxiliary signal; and

forming a difference between the differentiated air-mass sensor signal and the differentiated auxiliary signal to obtain the differential signal.

47. (New) The method according to claim 46, further comprising:

scaling the differentiated air-mass sensor signal to a time average of the air-mass sensor signal; and

scaling the differentiated auxiliary signal to a time average of the first auxiliary signal.

48. (New) The method according to claim 45, wherein the first auxiliary signal is obtained from at least one of the following:

state variables of the internal combustion engine;

system model of the internal combustion engine;

signal from an exhaust-gas probe;

a second air-mass sensor;

a rain sensor;

an ultrasound sensor;

a hot-wire air-mass sensor;

a capacitive sensor; and

an ohmic sensor.

49. (New) The method according to claim 45, wherein a comparison result is obtained based on the comparison of at least one of the first auxiliary signal and the signal derived from the first auxiliary signal to one of the air-mass sensor signal and the signal derived from the air-mass sensor signal.

50. (New) The method according to claim 49, wherein the controlled variable is determined based on the comparison result, and wherein the controlled variable is used for the control of the internal combustion engine.

51. (New) The method according to claim 48, wherein the first auxiliary signal is obtained from a signal of a capacitive sensor, the capacitive sensor being configured as a component of the first air-mass sensor.

52. (New) The method according to claim 48, wherein the capacitive sensor is configured as a plate capacitor having a first and a second capacitor plate, the first capacitor plate being formed by a surface of the first air-mass sensor.

53. (New) The method according to claim 48, wherein the ohmic sensor includes at least two electrodes made of a corrosion-resistant material.

54. (New) The method according to claim 48, wherein the ohmic sensor is arranged on a surface of the first air-mass sensor.

55. (New) The method according to claim 45, wherein the first auxiliary signal is compared to the air-mass sensor signal to obtain the controlled variable.

56. (New) The method according to claim 55, wherein the air-mass sensor signal is filtered prior to being compared to the first auxiliary signal.

57. (New) The method according to claim 56, wherein a low pass filter is used to filter the air-mass sensor signal.

58. (New) The method according to claim 57, wherein the cut-off frequency of the low pass filter is selected dynamically and as a function of state variables of the internal combustion engine.

59. (New) The method according to claim 58, wherein the cut-off frequency of the low pass filter is selected as a function of a model of the internal combustion engine.

60. (New) The method according to claim 45, wherein the first auxiliary signal is obtained from the air-mass sensor signal by filtering the air-mass sensor signal with a high pass filter, and wherein the first auxiliary signal is used as the controlled variable to control the internal combustion engine.

61. (New) The method according to claim 60, wherein the cut-off frequency of the high-pass filter is selected dynamically.

62. (New) The method according to claim 61, wherein the cut-off frequency of the high-pass filter is selected as a function of state variables of the internal combustion engine.

63. (New) The method according to claim 60, further comprising:

obtaining a second auxiliary signal by filtering the air-mass sensor signal with a low-pass filter;

wherein the controlled variable is obtained from the first auxiliary signal, the second auxiliary signal and state variables of the internal combustion engine.

64. (New) The method according to claim 63, wherein the cut-off frequency of the low-pass filter is selected dynamically.

65. (New) The method according to claim 64, wherein the cut-off frequency of the low-pass filter is selected as a function of state variables of the internal combustion engine.

66. (New) The method according to claim 65, wherein the cut-off frequency of the low-pass filter is selected as a function of a model of the internal combustion engine.

67. (New) The method according to Claim 48, wherein:

the first and second air-mass sensors are arranged in an intake manifold of the internal combustion engine, air flowing into the intake manifold first reaching the first air-mass sensor and then reaching the second air-mass sensor, the second air-mass sensor being separated from the first air-mass sensor by a clearance in the flow direction of the air;

the comparison of at least one of the first auxiliary signal and a signal derived from the first auxiliary signal to one of the air-mass sensor signal and a signal derived from the air-mass sensor signal includes:

delaying of the air-mass sensor signal by a delay time to obtain a delayed air-mass sensor signal;

subtracting the first auxiliary signal from the delayed air-mass sensor signal to obtain a differential signal;

integrating the differential signal to obtain an indicator signal;

differentiating the delayed air-mass sensor signal to obtain a differentiated air-mass sensor signal;

forming an absolute value of the differentiated air-mass sensor signal to obtain a positive air-mass sensor signal;

differentiating the first auxiliary signal to obtain a differentiated auxiliary signal;

forming an absolute value of the differentiated auxiliary signal to obtain a positive auxiliary signal; and

subtracting the positive auxiliary signal from the positive air-mass sensor signal to obtain a further differential signal.

68. (New) The method according to claim 67, further comprising:

comparing the indicator signal with a threshold value to determine whether the indicator signal exceeds the threshold value;

wherein the controlled variable is obtained based on the first auxiliary signal and the indicator signal if the differential signal is positive, and wherein the controlled variable is obtained based on the air-mass sensor signal and the indicator signal if the differential signal is negative.

69. (New) The method according to claim 67, wherein the first and second air-mass sensors are arranged side-by-side, the delay time is substantially zero, and the second air-mass sensor is provided with a water-droplet separator.

70. (New) The method according to claim 69, wherein a model simulating the dynamic response of the water-droplet separator is taken into account in processing at least one of the air-mass sensor signal and the first auxiliary signal.

71. (New) The method according to claim 67, wherein the first and second air-mass sensors are integrated in a common sensor system.

72. (New) The method according to claim 45, wherein, for controlling the operation of the internal combustion engine based on the air-mass sensor signal from the first air-mass sensor, the first auxiliary signal is utilized, and, as a function of the first auxiliary signal,

the influence of an interference variable on the regulation of the internal combustion engine is reduced, the interference variable affecting the air-mass sensor signal.

73. (New) The method according to claim 72, wherein the interference variable is derived from the first auxiliary signal, and the controlled variable is obtained as a function of the interference variable.

74. (New) The method according to claim 47, wherein the first air-mass sensor is configured as hot-film air-mass sensor.

75. (New) A computer-readable medium for storing a plurality of computer-executable program codes for controlling the operation of an internal combustion engine based on an air-mass sensor signal from a first air-mass sensor, the plurality of computer-executable program codes performing:

comparing at least one of a first auxiliary signal and a signal derived from the first auxiliary signal to one of the air-mass sensor signal and a signal derived from the air-mass sensor signal to obtain a differential signal;

obtaining a positive differential signal by forming an absolute value of the differential signal; and

obtaining a filtered differential signal by filtering the positive differential signal;

wherein the air-mass sensor signal is used as a controlled variable if one of the positive differential signal and the filtered differential signal falls below a predefined threshold value, and wherein the first auxiliary signal is used as the controlled variable if one of the positive differential signal and the filtered differential signal exceeds the predefined threshold value.

76. (New) A control unit for controlling the operation of an internal combustion engine using a control unit, based on an air-mass sensor signal from a first air-mass sensor, comprising:

an arrangement for comparing at least one of a first auxiliary signal and a signal derived from the first auxiliary signal to one of the air-mass sensor signal and a signal derived from the air-mass sensor signal to obtain a differential signal;

an arrangement for obtaining a positive differential signal by forming an absolute value of the differential signal; and

a filter element for obtaining a filtered differential signal by filtering the positive differential signal;

wherein the air-mass sensor signal is used as a controlled variable if one of the positive differential signal and the filtered differential signal falls below a predefined threshold value, and wherein the first auxiliary signal is used as the controlled variable if one of the positive differential signal and the filtered differential signal exceeds the predefined threshold value.